

REMARKS

The claims previously in the case have been replaced by a set of new claims that are believed to be proper as to form and patentable over the cited references.

Reconsideration is accordingly respectfully requested, for the rejection of the claims as anticipated by or unpatentable over DuBay.

DuBay is concerned with less lethal missiles made of wood, rubber foam, rubber balls and composites which may be damaged by high pressure gas (col.1, lines 35-40).

In order to reduce pressure so as not to damage the missile, DuBay provides gas control ports in a protective wall (7) situated between a gas expansion chamber (4) and a missile chamber for releasing low-pressure gas into the missile chamber. The gas expansion chamber is formed between a base plate and the protective wall (col. 1, lines 51-61).

In the base plate 9, a conventional cartridge-blank 14 or 15 is received in a stepped opening 13 formed in a hub portion 12 reaching forward from a back wall 11 of the base plate 9 (col. 3, lines 12-18).

From description and drawings it is obvious that combustion gases arising from ignition of the propellant 18 flows directly and non-restrictedly from the cartridge-blank 14, 15

into the gas expansion chamber 4. As a result of the larger volume in chamber 4, gas pressure will be reduced at the risk of non-complete combustion of the propellant in the cartridge-blank. With respect to combustion characteristics, the cartridge of DuBay lacks a high-pressure chamber and is rather to be understood as a two-stage low-pressure structure.

In contrast to DuBay, the present invention provides a true high/low pressure system aiming to ensure a complete combustion of the propellant charge in the cartridge-blank, in addition to expanding the gases for expulsion of a missile at a lower speed. This is achieved according to the present invention by providing the cartridge-blank with a flow-restriction through which combustion gases pass into a gas expansion chamber. The flow-restriction is a passage formed in a replaceable insert inserted in the front end of the cartridge-blank, the insert separating a high-pressure chamber established within the cartridge-blank from a low-pressure chamber formed in the shell-case.

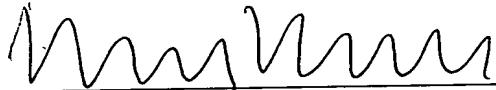
This is not only structurally different from DuBay who arranges a flow-restriction between a gas expansion chamber (reduced-pressure chamber) and a missile chamber (low-pressure chamber), both formed in the shell-case, but also functionally different in that DuBay fails to provide the high-pressure chamber that ensures complete combustion in the cartridge-blank where the charge is ignited.

As the new claims bring out these distinctions with ample particularity, it is believed that they are all patentable, and reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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